



## BROMOMETHANE

### What is BROMOMETHANE?

Bromomethane is a colorless man-made chemical gas that does not have a distinct smell. It does not catch fire easily or burn quickly. Bromomethane is found in the ocean, where it is most likely formed by algae and kelp. Other names for bromomethane include methyl bromide, mono-bromomethane, and methyl fume. Trade names include Embafume® and Terabol®.

### Where can bromomethane be found and how is it used?

Bromomethane is used to kill pests such as rats and bugs. It also kills fungi. Bromomethane is used to make other chemicals and to get oil out of nuts, seeds and wool.

Bromomethane is usually stored in sealed containers so it will not evaporate or leach into the soil and groundwater. When released in the environment, bromomethane breaks down into other chemicals. When it vaporizes, it takes about 11 months for half the bromomethane to break down. In groundwater, it takes about one month for half the bromomethane to break down.

### How can people be exposed to bromomethane?

*You could be exposed to bromomethane through:*

**Breathing** very, very low background levels in the air. You could breathe higher levels near a waste site where bromomethane is stored or in an area where it has been used as a pesticide. If you work where bromomethane is made or used, you could also breathe higher levels.

**Drinking** well water with bromomethane in it.

**Touching** liquid bromomethane at work.

**Eye Contact** by getting bromomethane vapors or liquid in the eyes at work.

### How does bromomethane work and how can it affect my health?

If you breathe in bromomethane, about half of it will pass through your lungs and enter your blood. Animal studies suggest that if you swallow bromomethane in water, most of it will be absorbed by your body through your stomach or intestines. Your blood carries bromomethane from your lungs and stomach to other parts of your body. Most bromomethane in your body is broken down into other chemicals which leave your body in the urine or in the air you breathe out. This usually starts happening in minutes and takes a few days. We do not know how much bromomethane can enter through the skin, but the amount is thought to be small.

Breathing bromomethane causes headache, vomiting and weakness within hours. Breathing large amounts of bromomethane causes fluid to build up in your lungs, leading to trouble breathing, muscle tremors, seizures, kidney damage and nerve damage. Exposure can also be fatal, although it is uncommon.

Animal studies using rabbits and monkeys showed moderate to severe effects of nervous system damage from bromomethane exposure. It is unknown as to whether long-term exposure to low levels causes severe nervous system damage in people.

At high levels, bromomethane causes the skin to itch, as well as redness and blisters. Animal studies suggest that bromomethane does not cause birth defects at low levels of exposure. These studies also suggest that bromomethane may affect reproduction at high exposure levels. Scientists do not know if bromomethane causes cancer in people.



## Frequently Asked Questions

### How is bromomethane poisoning treated?

If skin is exposed to high levels of bromomethane, stricken persons should remove contaminated clothing and wash skin with soap or mild detergent and water. In very bad cases, providers give burn care. Since breathing bromomethane can damage the lungs, oxygen, medicine to open airways, and breathing support may be used. Substances can help fluids exit the body in urine. Medicine can help stop any resulting seizures.

### What should I do if exposed to bromomethane?

**If you get bromomethane in your eyes**, hold eyelids apart and wash eyes with lots of flowing water. Do this for at least 15 minutes. Get medical help right away.

**If bromomethane gets on your skin or clothing**, remove clothing and shoes and place them in closed containers. Wash skin very well with mild soap and lots of water for at least 15 minutes. Get medical help right away. Throw away any clothing that touched the chemical, or wash it and air it out completely before wearing.

**If you breathe bromomethane**, move to an area with fresh air. Keep quiet and warm. Do not use mouth-to-mouth breathing methods on stricken people. Seek medical attention right away.

**If you swallow bromomethane**, rinse your mouth with lots of water. Drink water or milk. Get medical attention right away.

### What factors limit use or exposure to bromomethane?

At work, limit exposure by following safety practices. Ventilation should pull bromomethane vapor out of the air in places where exposure levels could be high. A monitor should verify air concentrations and oxygen levels. Wear protective clothing such as splash-proof safety goggles. Do not wear contact lenses nor gloves or rubber boots, which can trap the liquid or vapor inside them. If breathing protection is needed, wear a compressed air respirator or a full-face canister respirator. Entrances to areas or buildings being treated with pest-control products containing bromomethane should be clearly posted with warning signs.

### Is there a medical test to show whether I've been exposed to bromomethane?

Blood and exhalation tests report bromomethane exposure if done immediately after exposure. A blood test measures bromide, the product made when bromomethane breaks down in your blood or urine. Bromide is normally found in blood, but the level would be higher following bromomethane exposure. This test is only useful if done within 1-2 days after exposure. It cannot show if any health effects will occur.

### Technical information for bromomethane

CAS Number: 74-83-9

Chemical Formula:  $\text{CH}_3\text{Br}$

Carcinogenicity (EPA): Not classifiable as to human carcinogenicity.

MCL (Drinking Water): There is no MCL for this chemical.

OSHA Standards: 20 ppm air; (80 mg/m<sup>3</sup>)

NIOSH Standards: 2000 parts per million

ACGIH: 8 hr Time Weighted Avg. (TWA): 1 ppm

### References and Sources

Agency for Toxic Substances and Disease Registry (ATSDR). 1992. *Toxicological profile for bromomethane*. Atlanta, GA: U.S. Department of Health and Human Services.

[http://www.inchem.org/documents/hsg/hsg/hsg86\\_e.htm](http://www.inchem.org/documents/hsg/hsg/hsg86_e.htm)